

Table1: In case of printing without color ink

		ink value for using printing		waste ink value	
		black ink	color ink	black ink	color ink
First ink cartridge 500	second ink cartridge 600				
first	first	a1 (cc)	0 (cc)	(n2/n1) x b1 (cc)	b1 (cc)
	second	a2 (cc)	0 (cc)	(n2/n1) x b2 (cc)	b2 (cc)
	third	a3 (cc)	0 (cc)	(n2/n1) x b3 (cc)	b3 (cc)
	p'th	ap (cc)	0 (cc)	(n2/n1) x bp (cc)	bp (cc)
	total		0 (cc)	(n2/n1) x $\sum bi$ (cc)	$\sum bi$ (cc)
Second (black ink) cartridge	a1 + (n2/n1) x b1 = a2 + (n2/n1) x b2 = ... = V2				
First (color ink) cartridge	b1 + b2 + ... bp = $\sum bi$ = V1				
waste ink value	$(n2/n1) \times \sum bi = ((n2+n1)/n1) \times \sum bi$				

Table 2: In case of printing with color ink

First ink cartridge		Second ink cartridge		ink value for using printing		waste ink value
	500	600	black ink	color ink	black ink	color ink
frist	frist	d1 (cc)	c1 (cc)	(n2/n1) x e1 (cc)	e1 (cc)	
	second	d2 (cc)	c2 (cc)	(n2/n1) x e2 (cc)	e2 (cc)	
	p'th	dq (cc)	cq (cc)	(n2/n1) x eq (cc)	eq (cc)	
total			$\sum c_i$ (cc)	$(n2/n1) \times \sum e_i$ (cc)	$\sum e_i$ (cc)	$\sum e_i$ (cc)
Second (black ink) cartridge			$d1 + (n2/n1) \times e1 = d2 + (n2/n1) \times e2 = \dots = v_2$			
First (color ink) cartridge				$(c1 + \dots + cq) + (e1 + \dots + eq) = \sum c_i + \sum e_i = v_1$		
waste ink				$(n2/n1) \times \sum e_i = ((n2+n1)/n1) \times \sum e_i$		

Fig.1

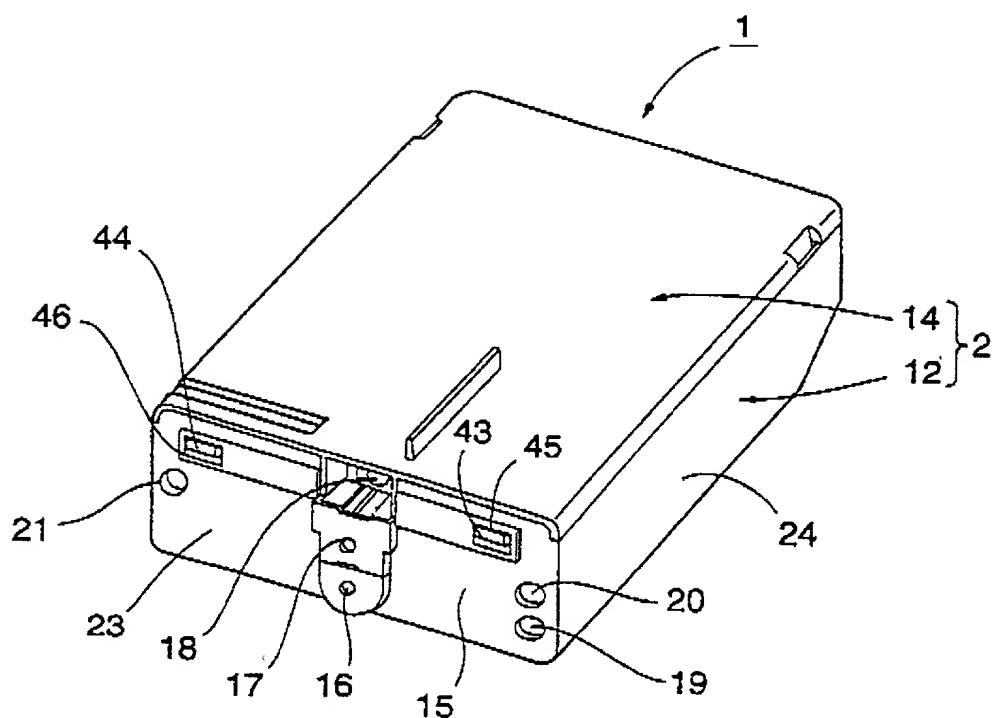


Fig.2

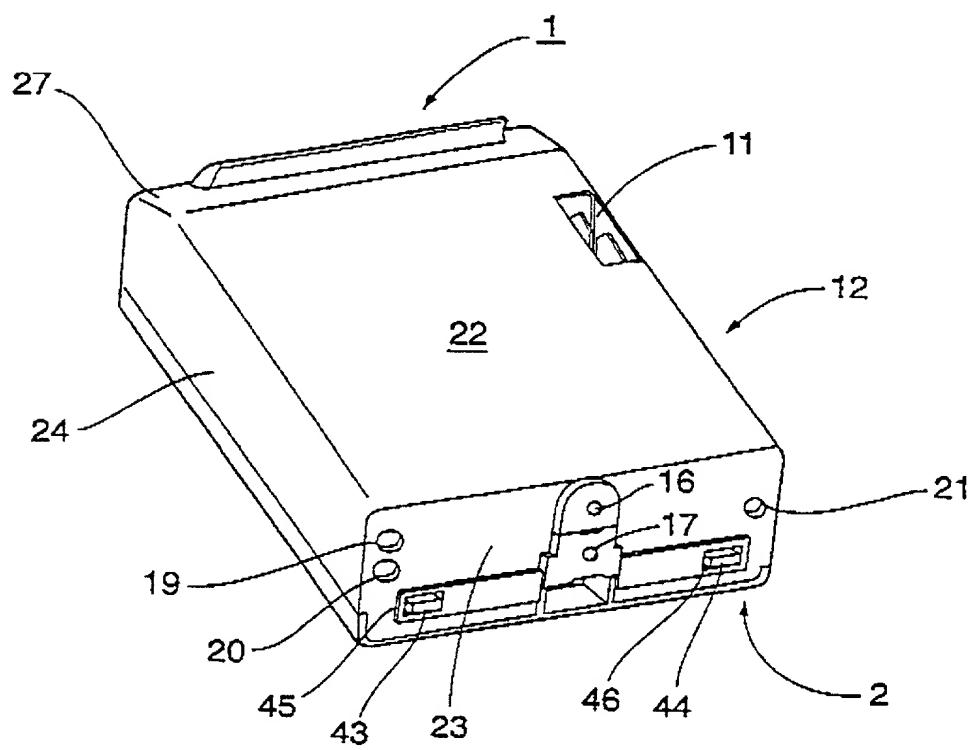


Fig.3

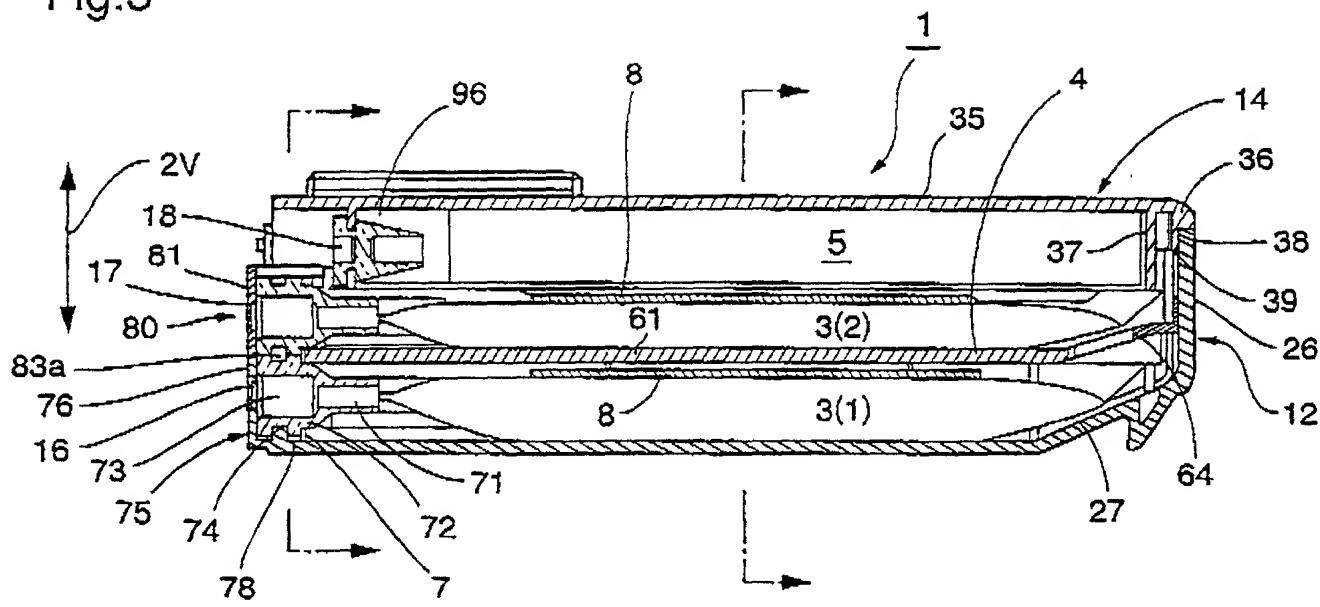


Fig.4

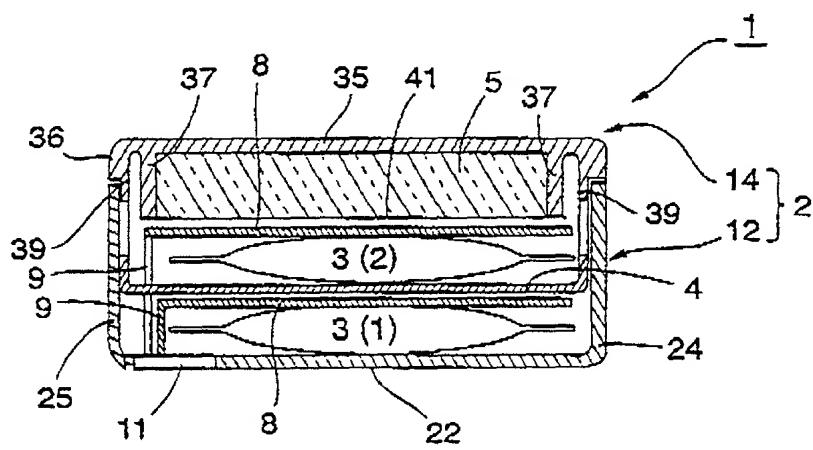


Fig. 6

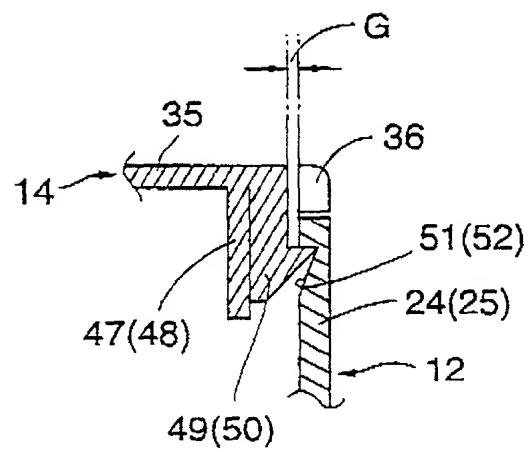


Fig.5

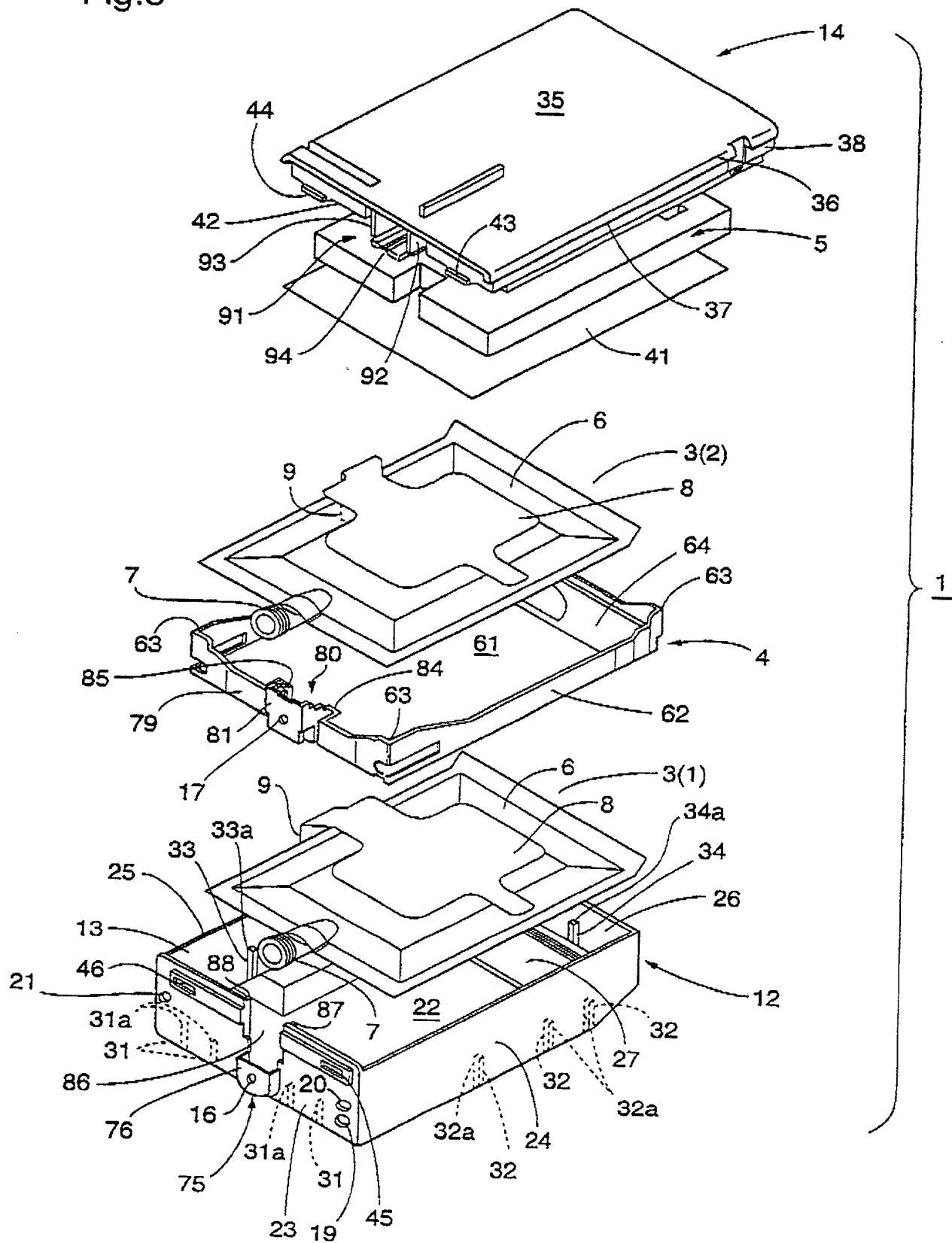


Fig.7

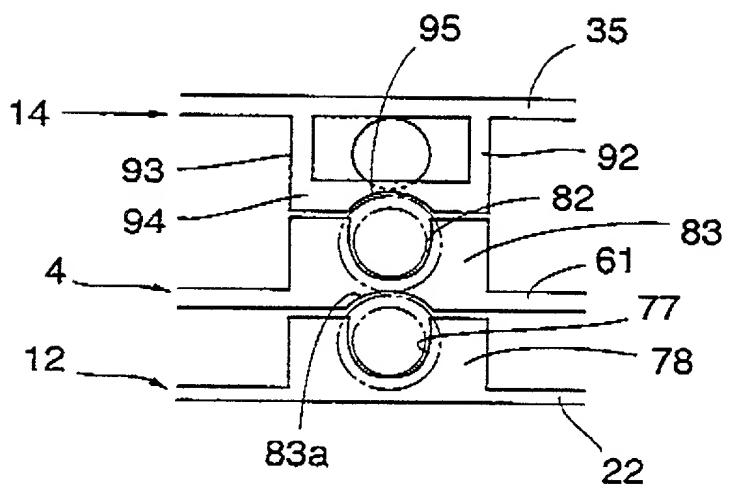


Fig.8

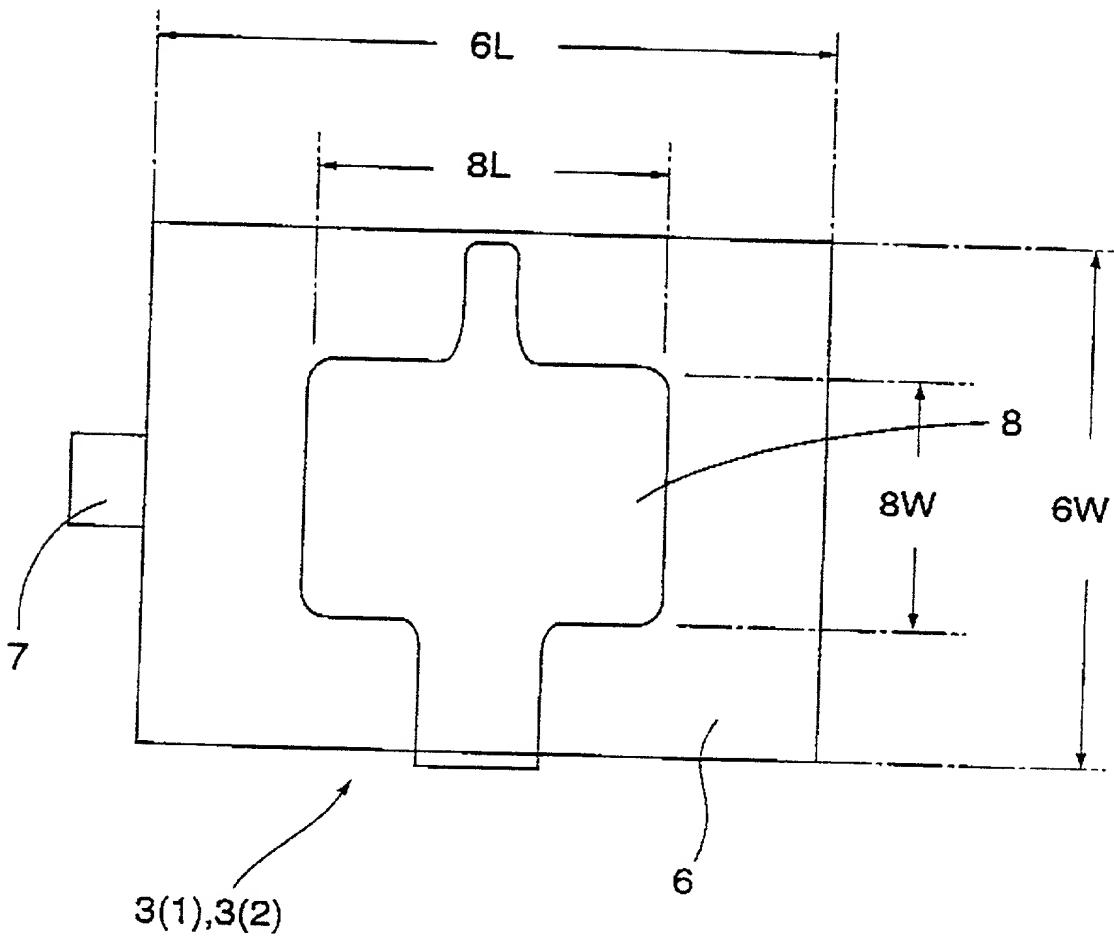


Fig.9

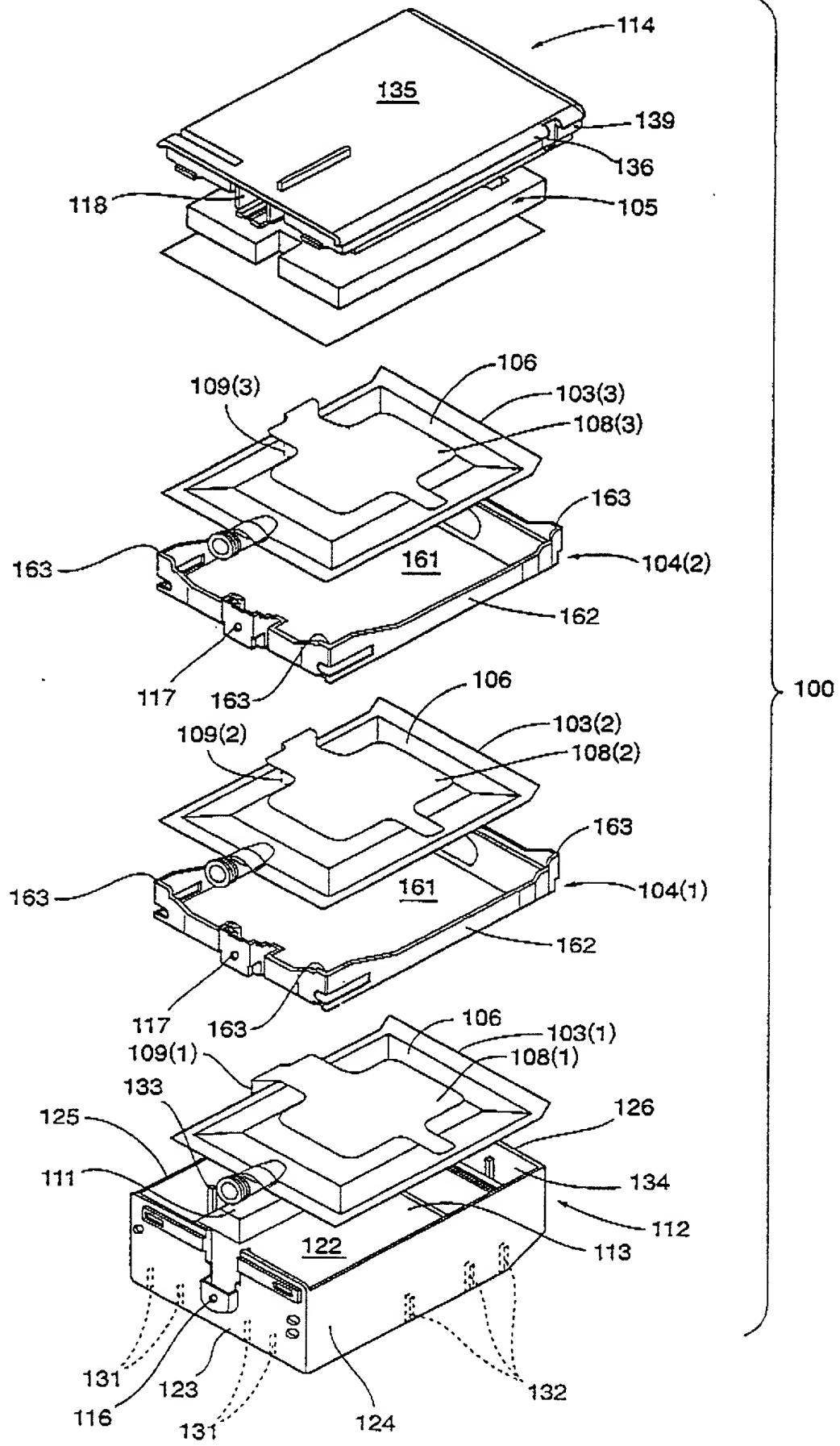


Fig.10

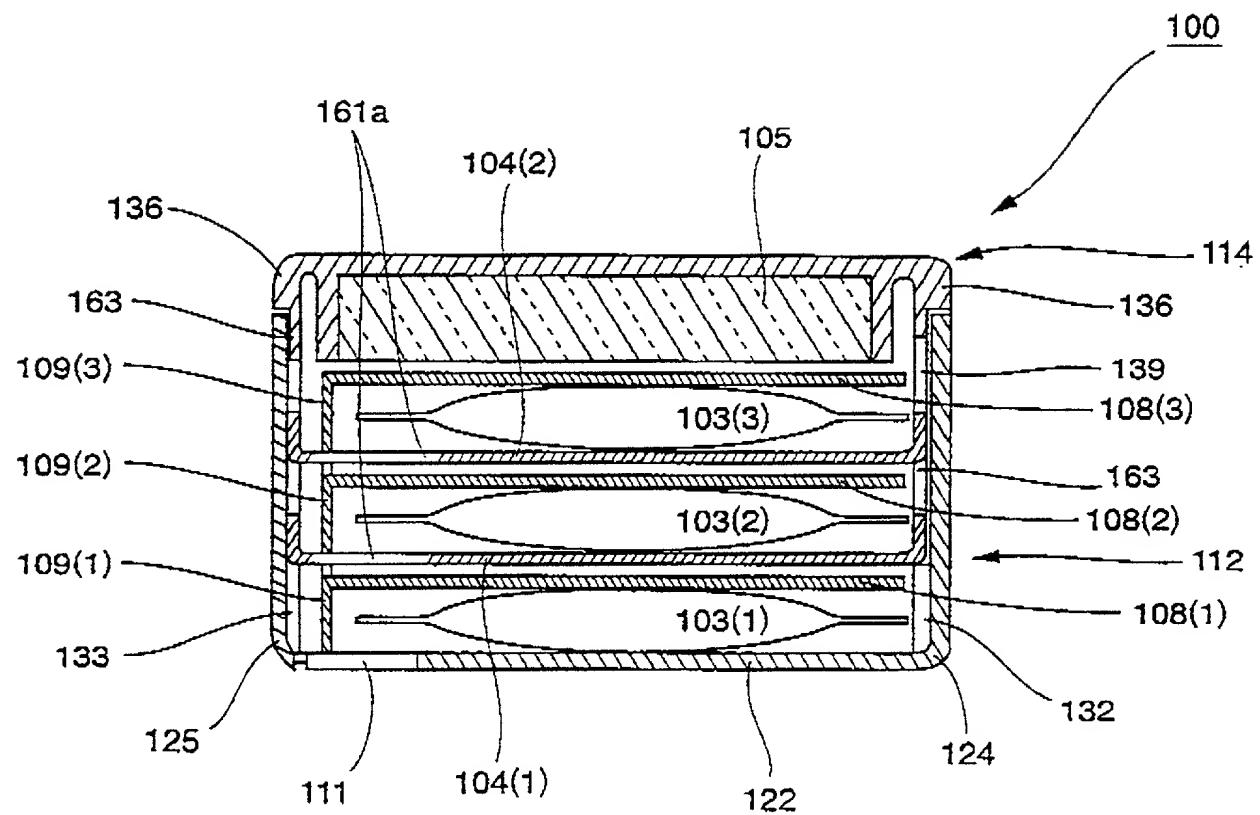


Fig.11

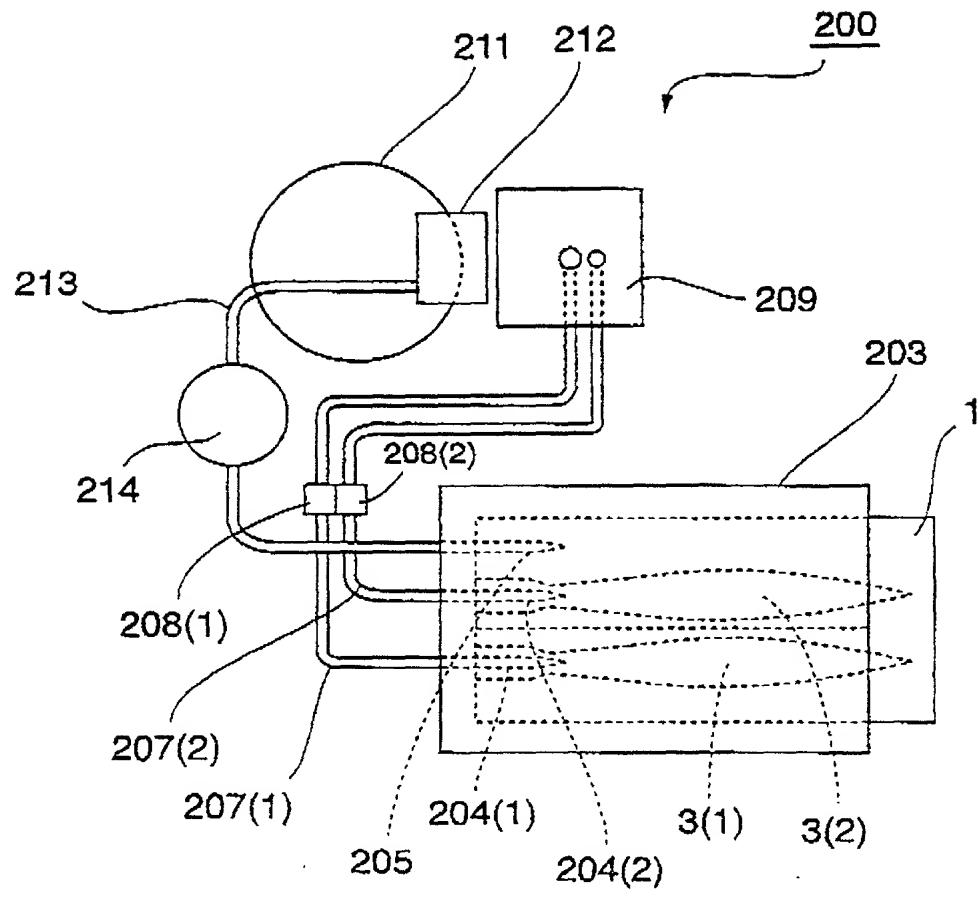


Fig.12

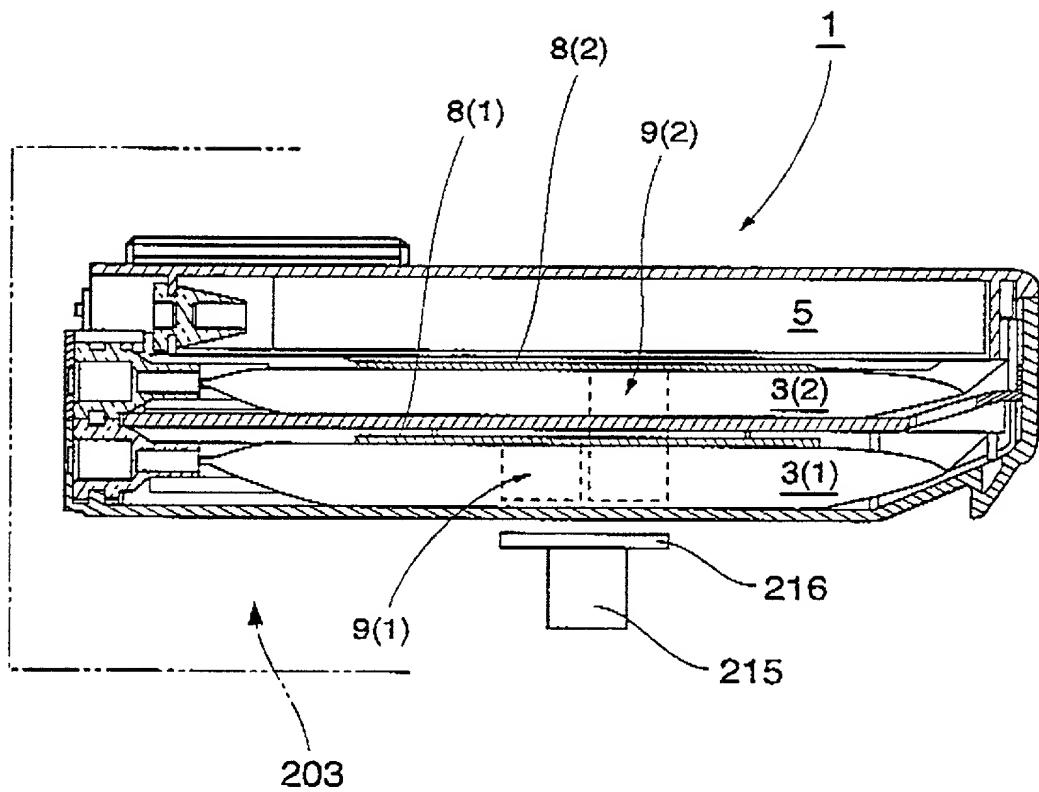


Fig. 13

Recovery processing control of signal

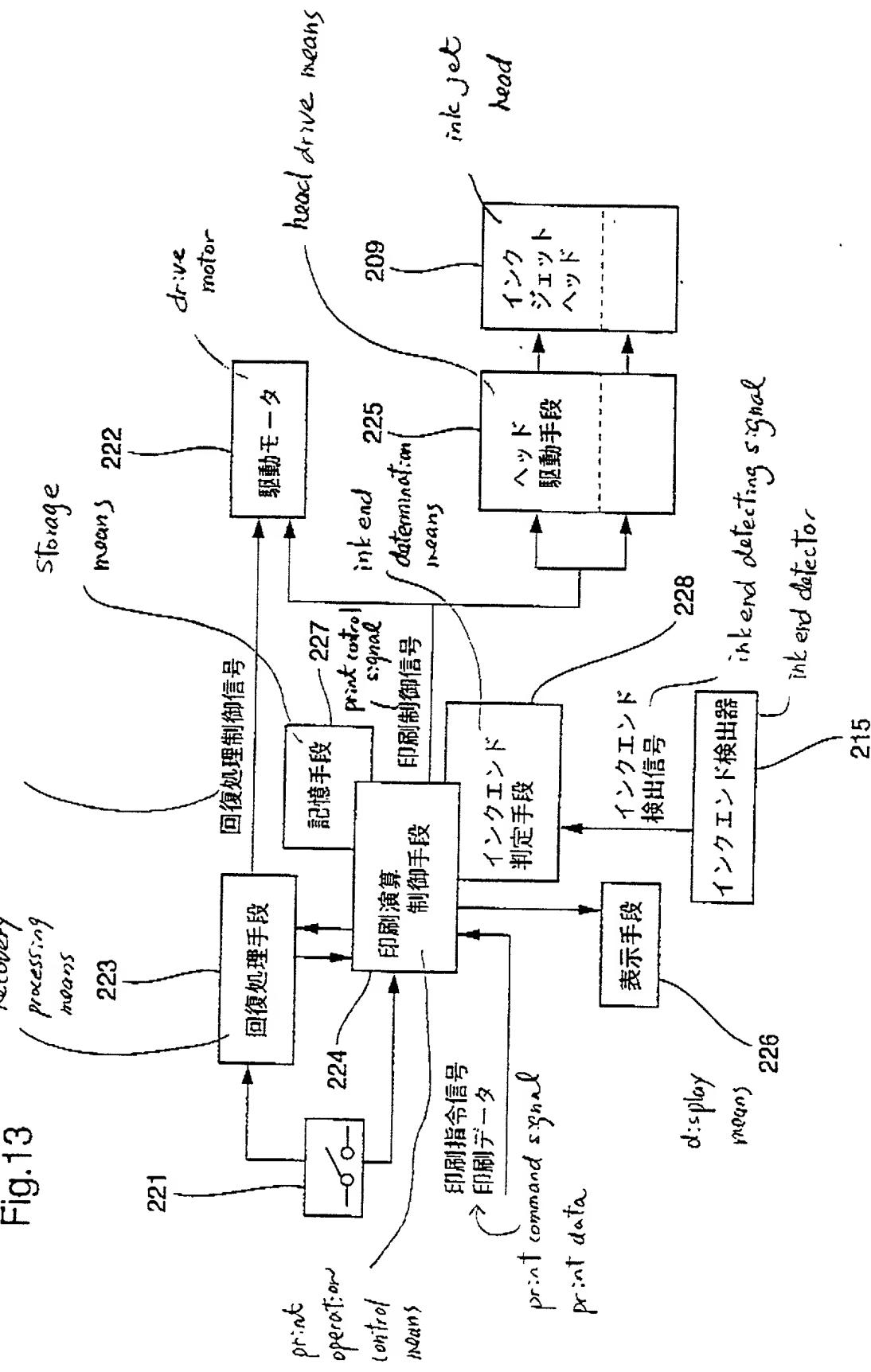


Fig. 14

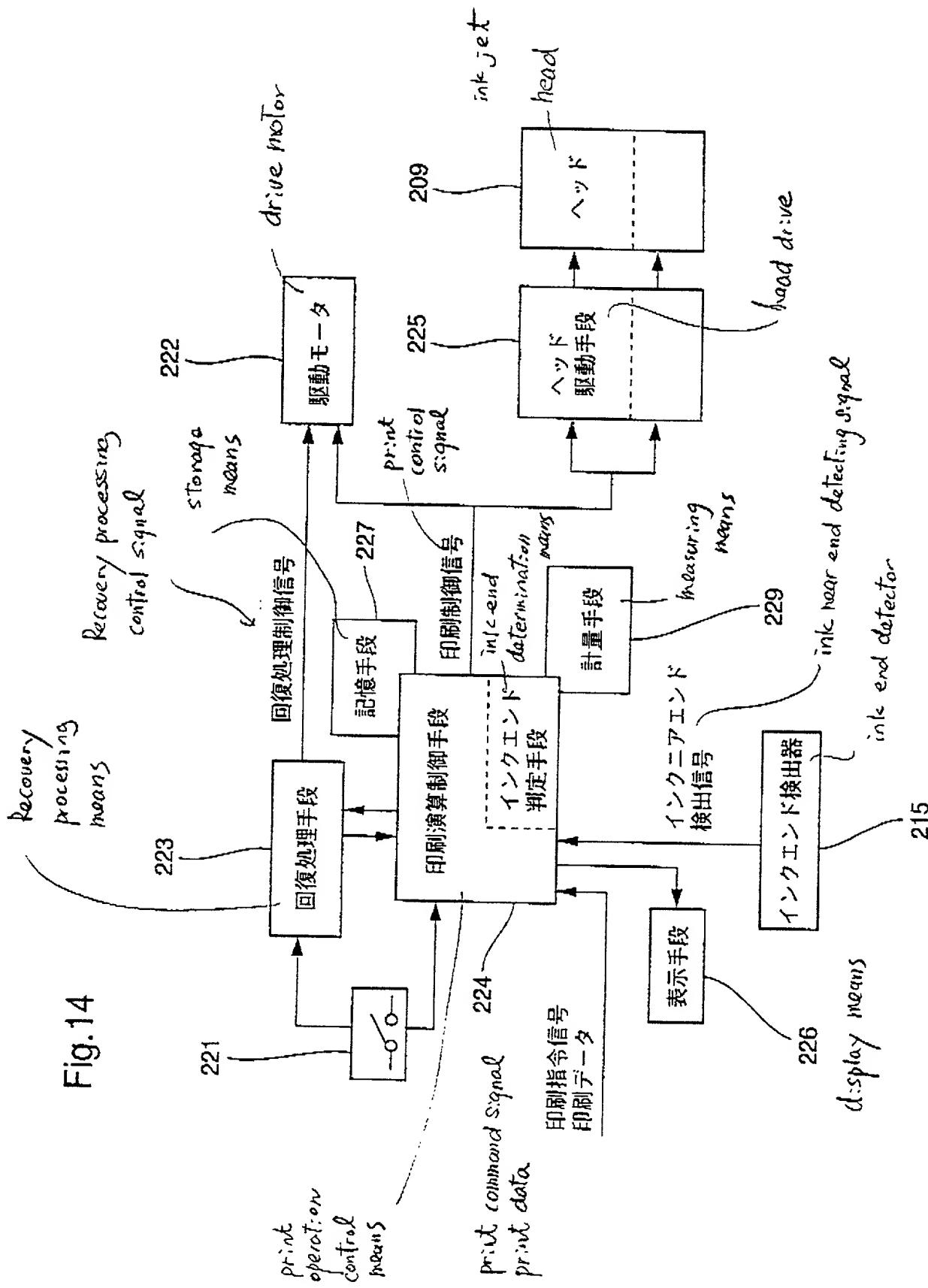


Fig.15

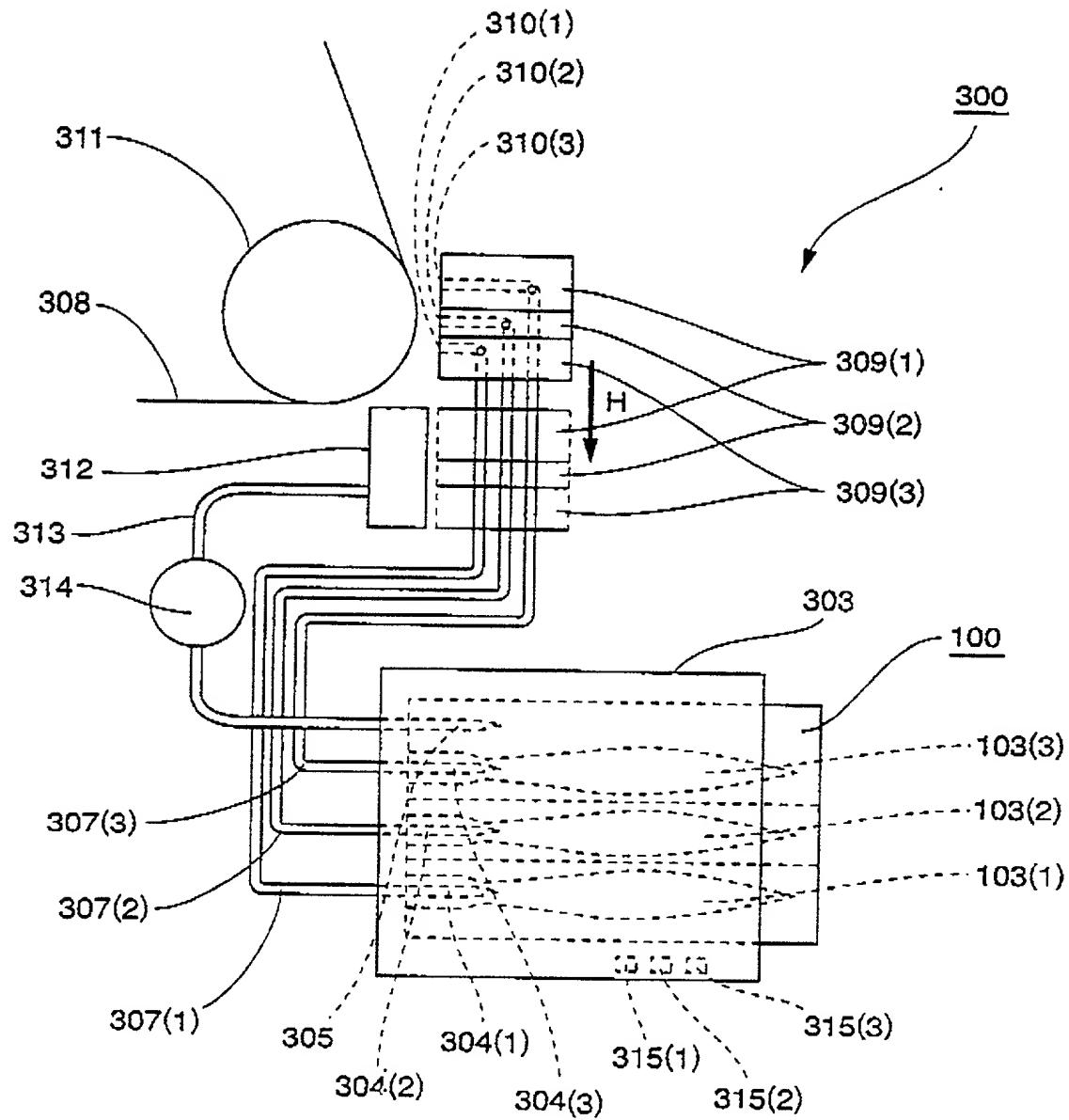


Fig.16

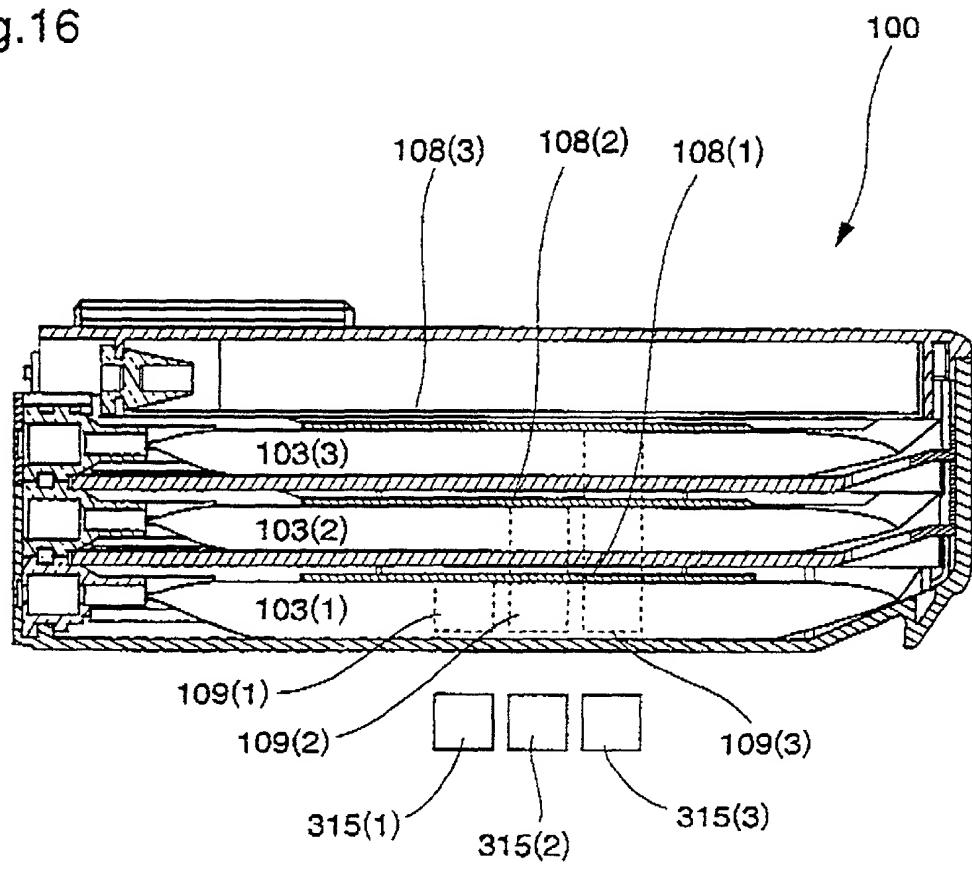


Fig.17

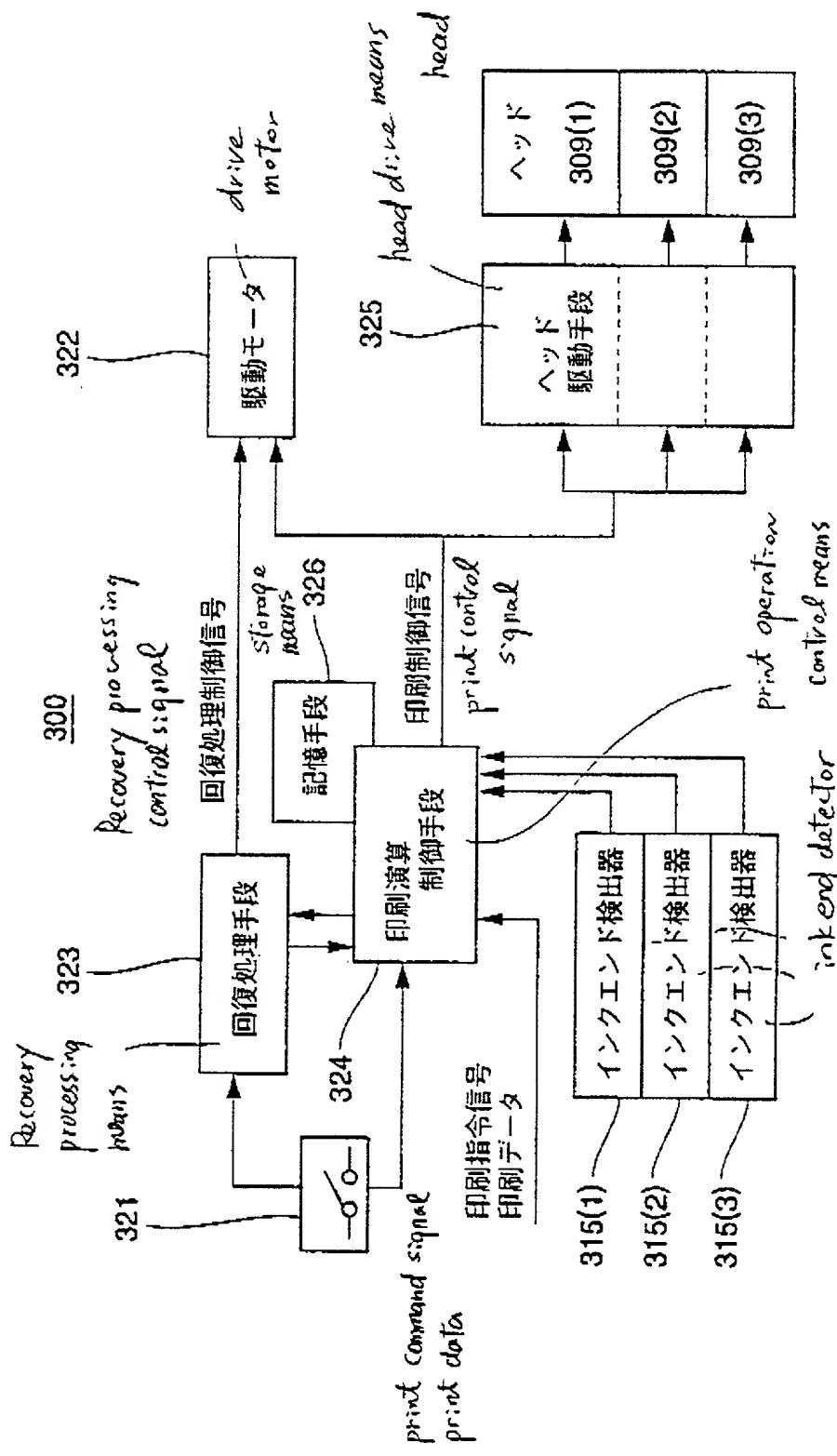


Fig.18

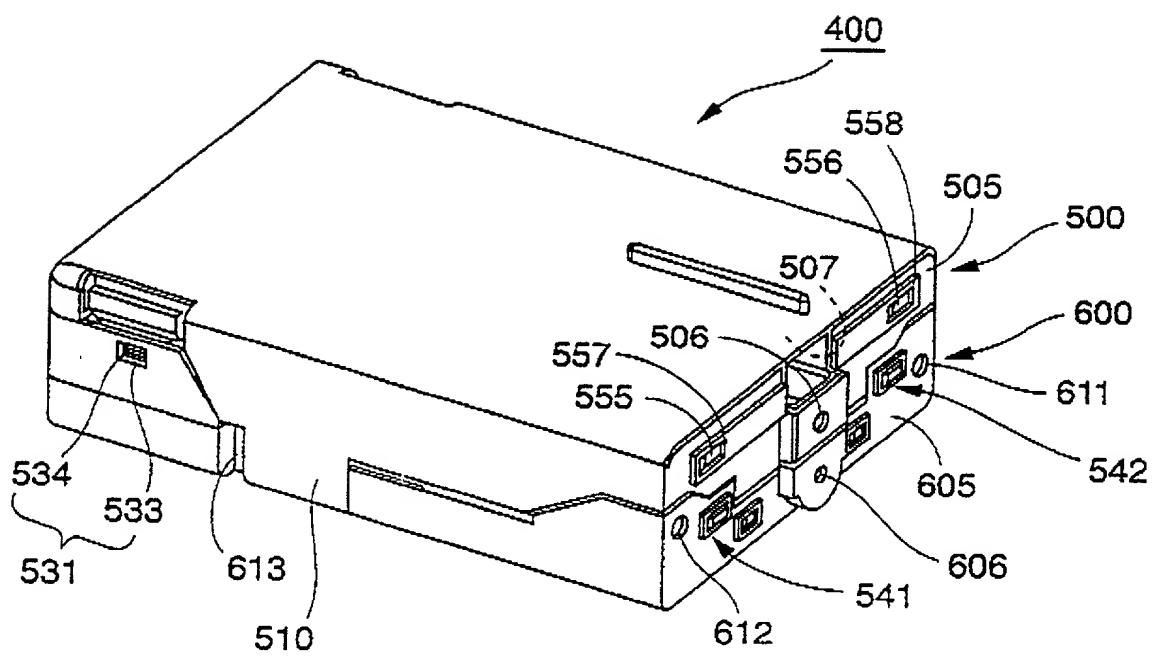


Fig.19

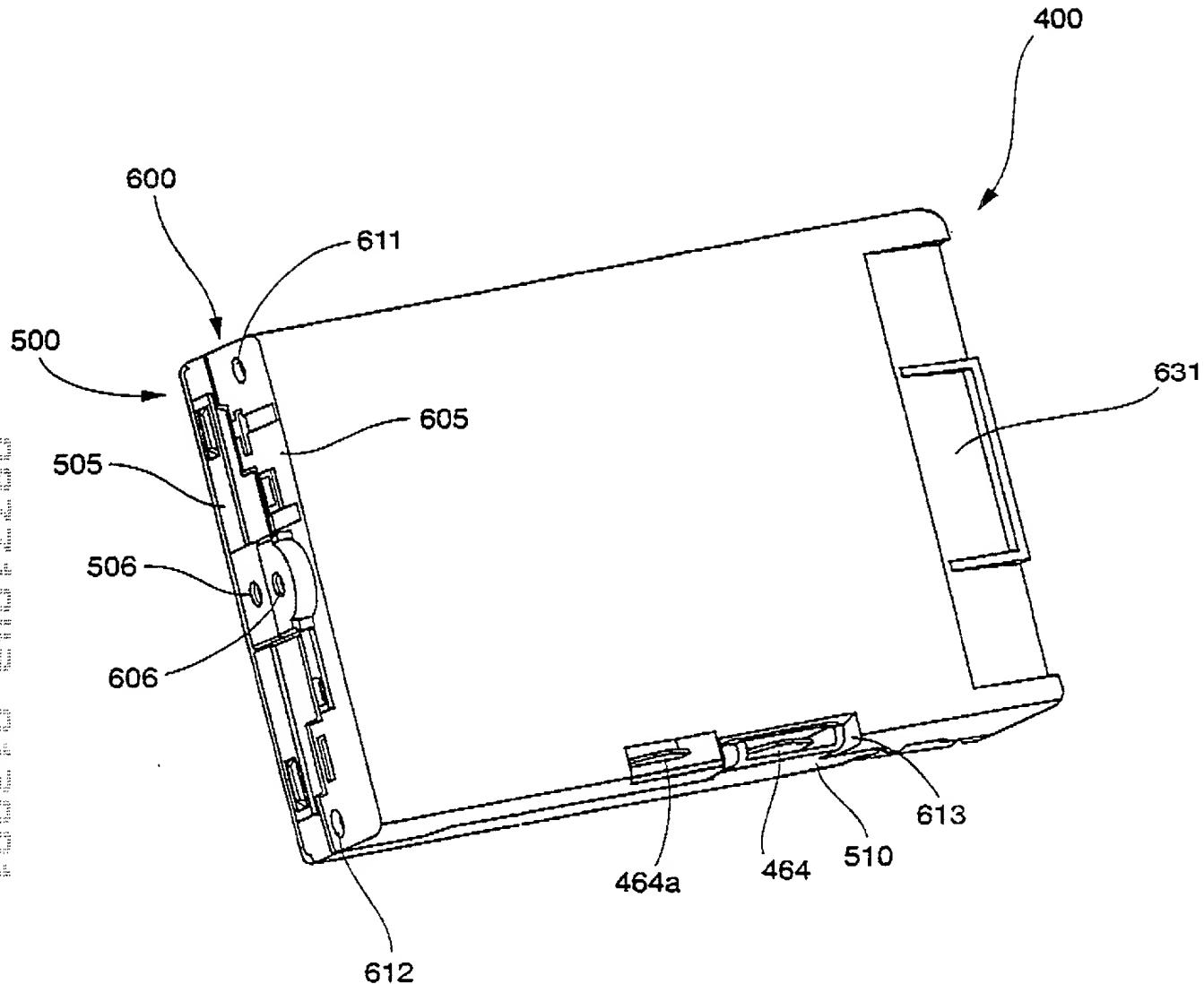


Fig.20

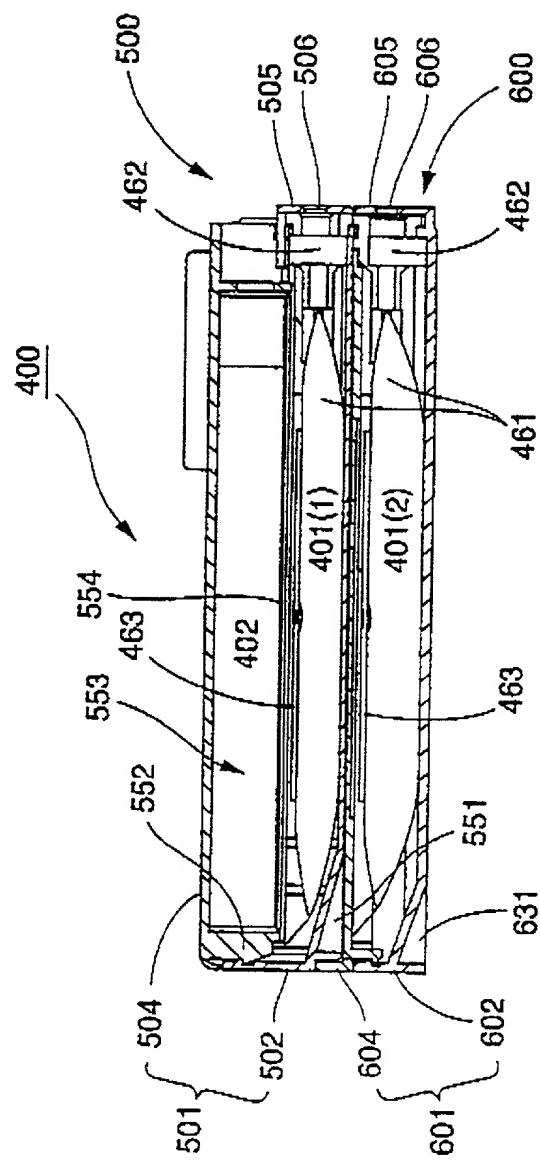


Fig.21

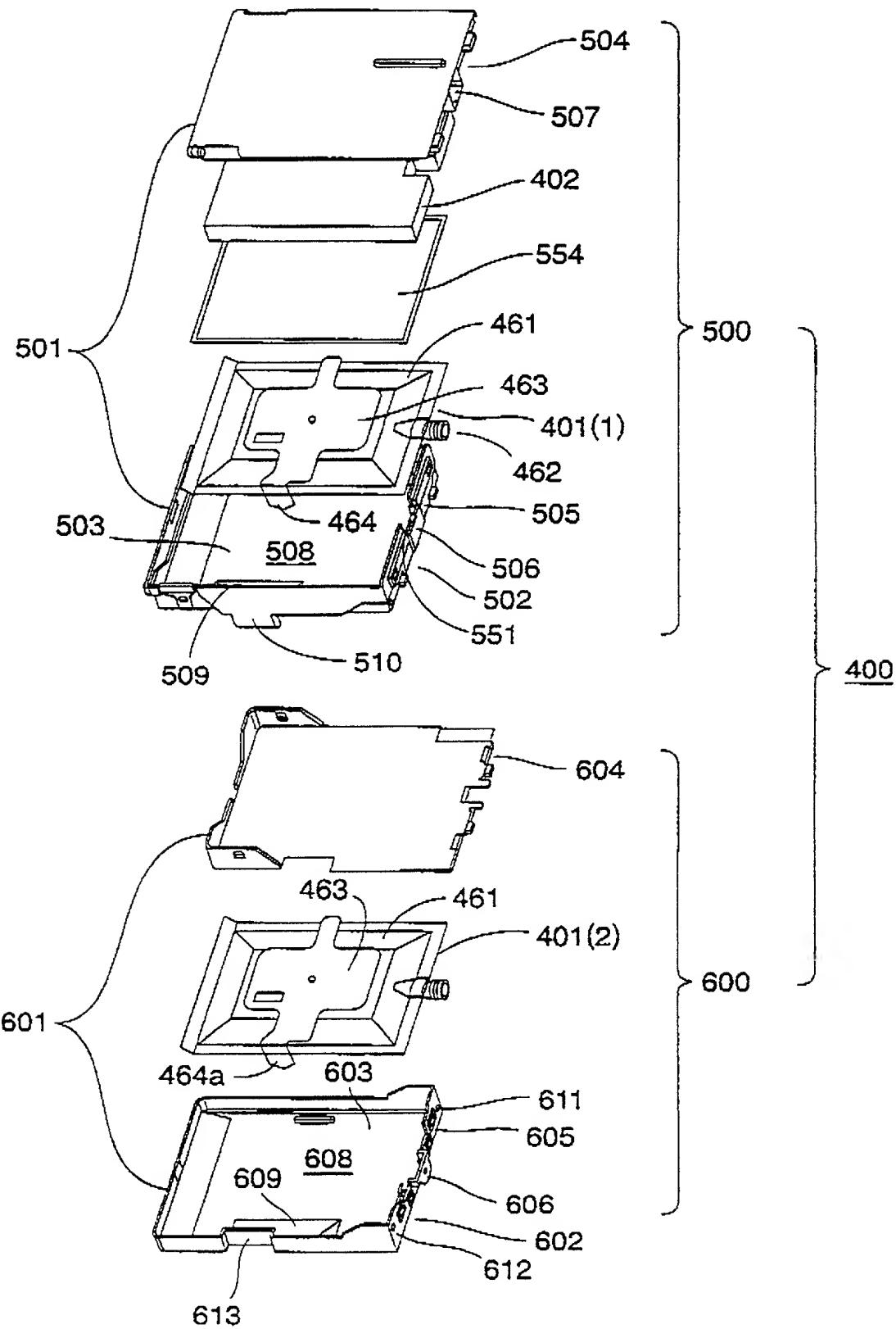


Fig.22

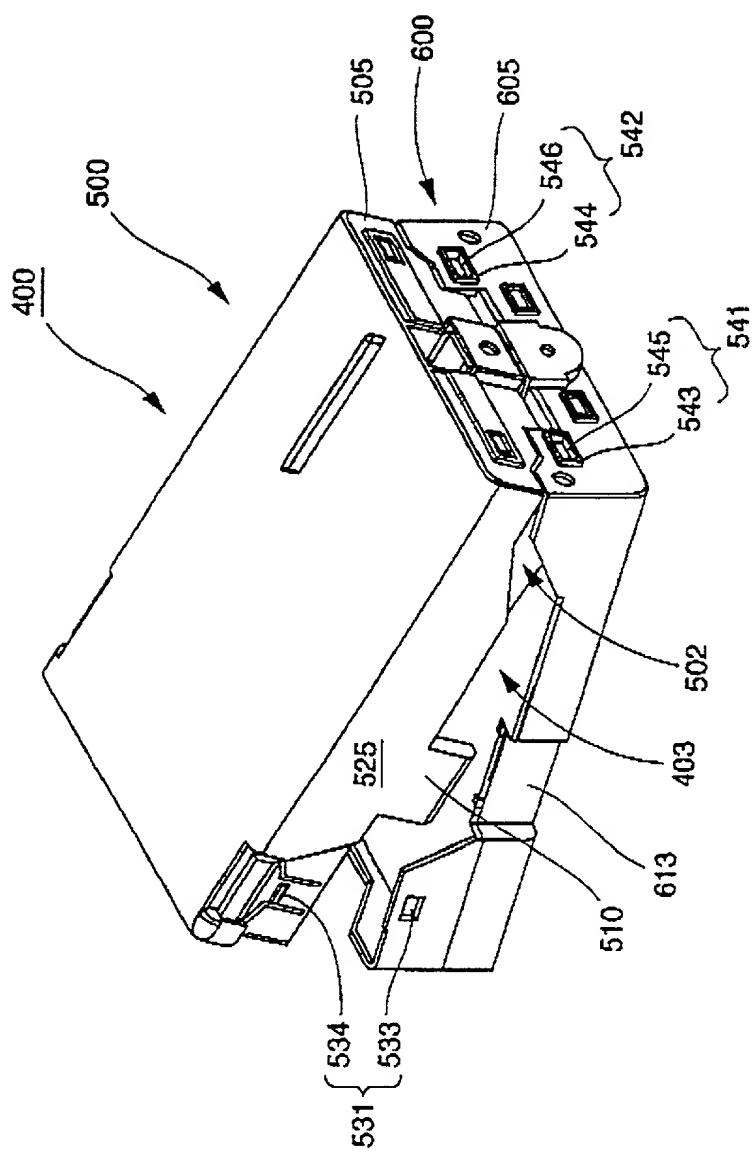


Fig.23

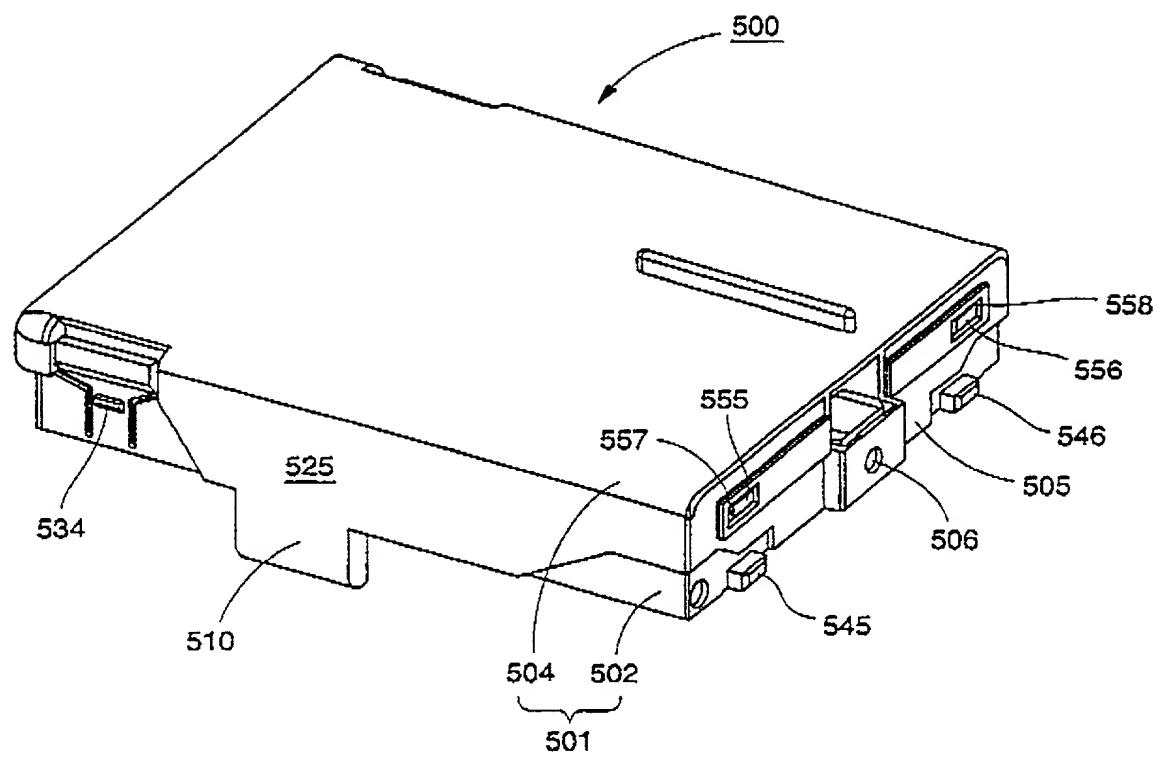


Fig.24

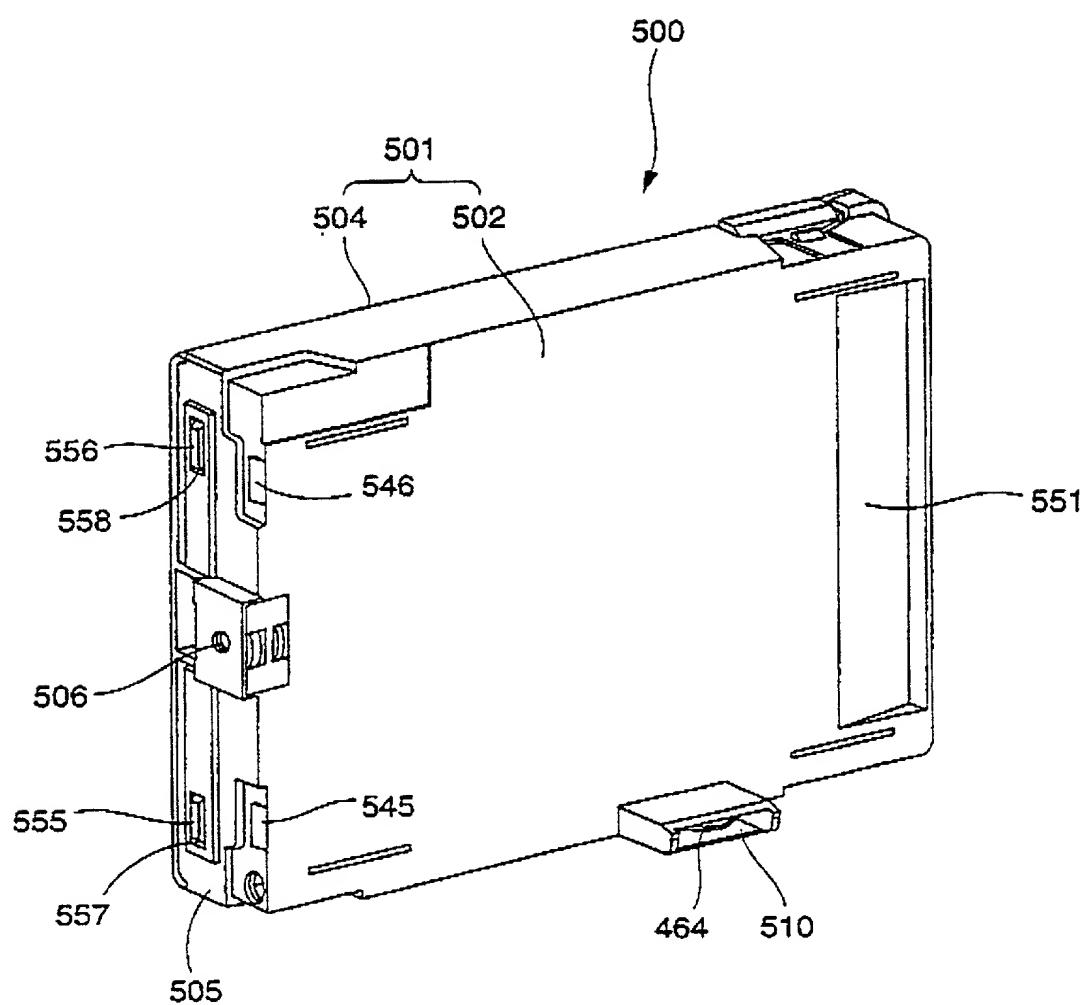


Fig.25

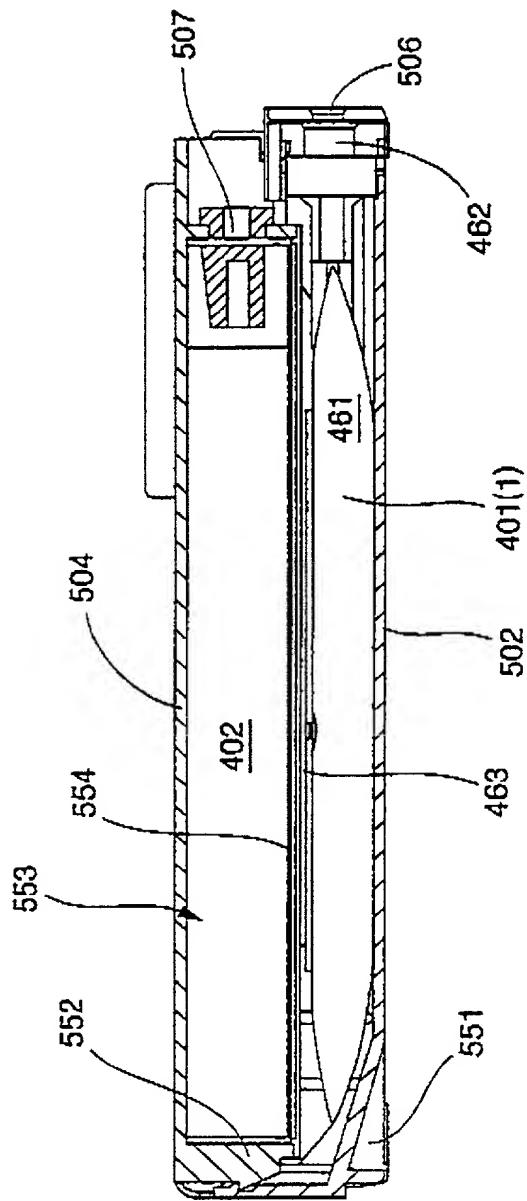


Fig.26

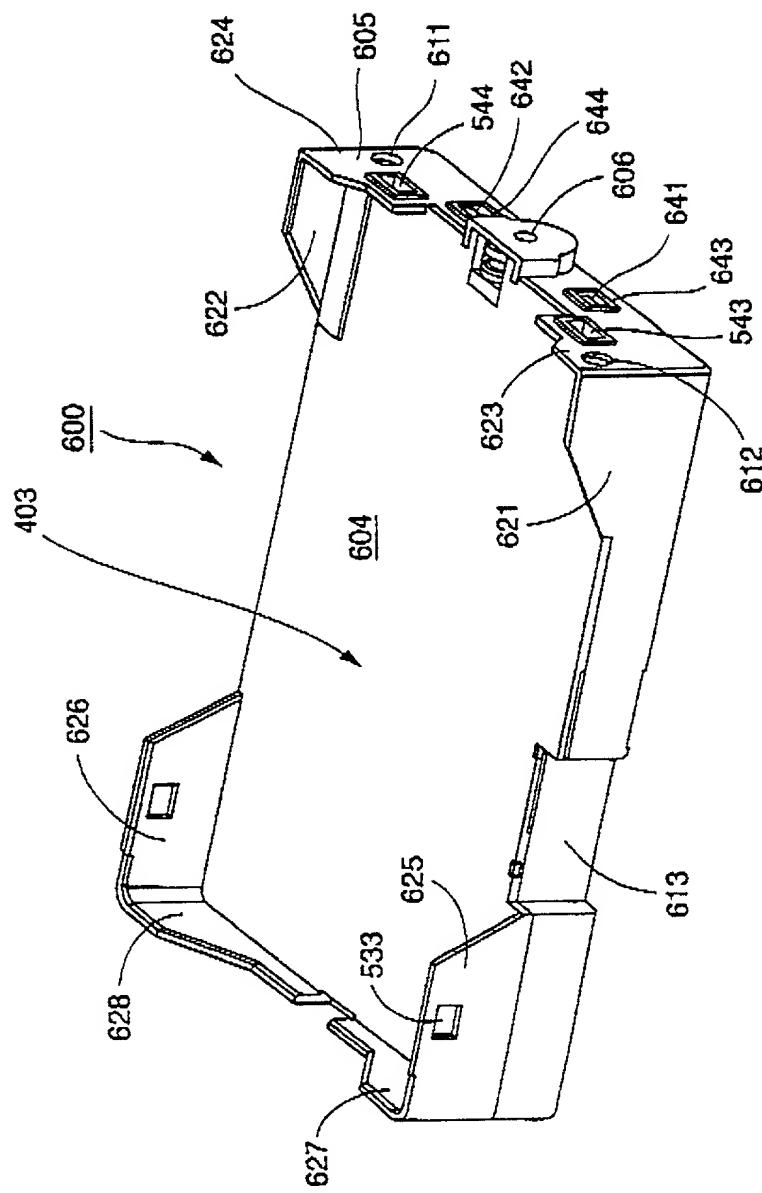


Fig.27

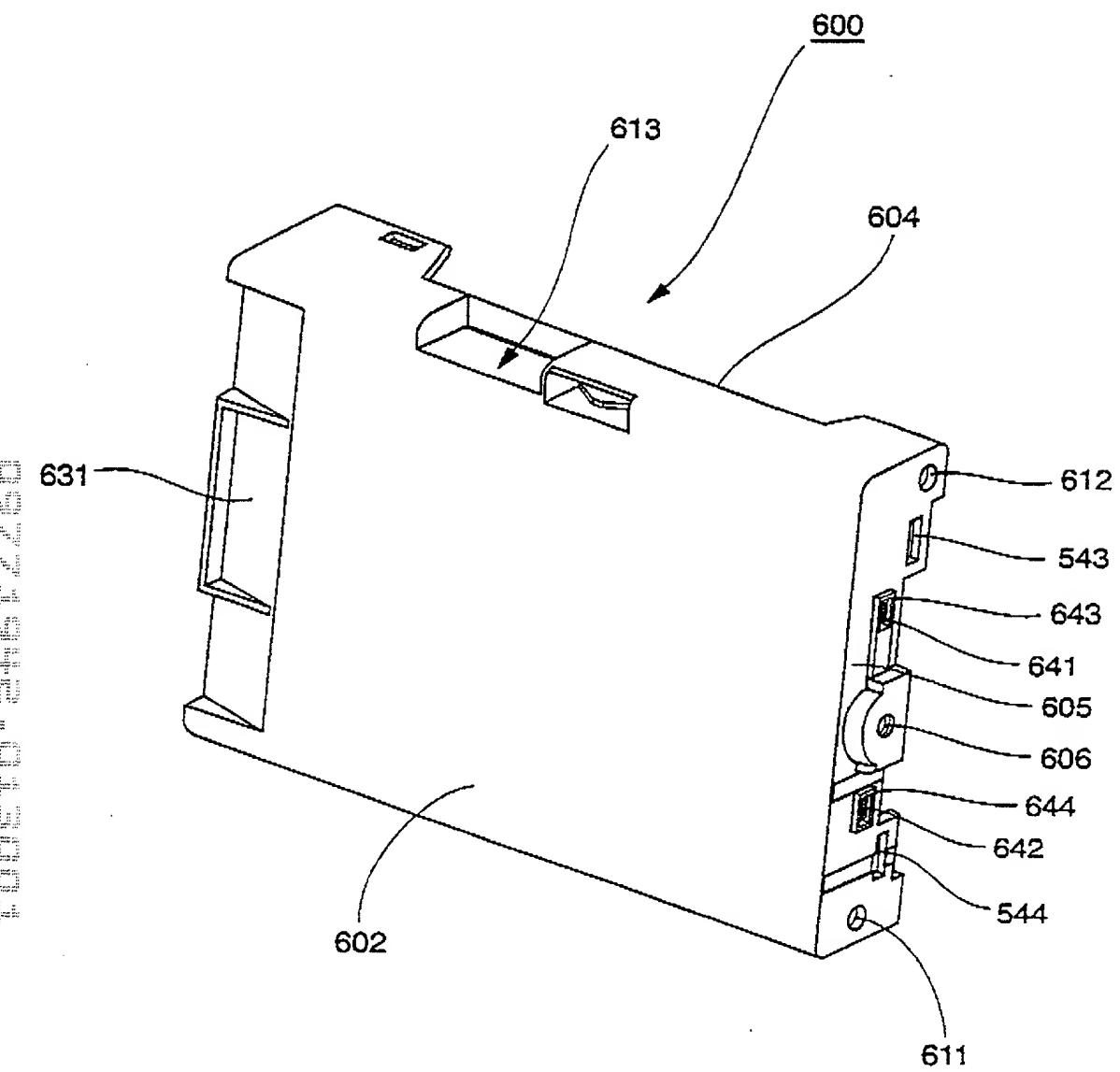


Fig.28

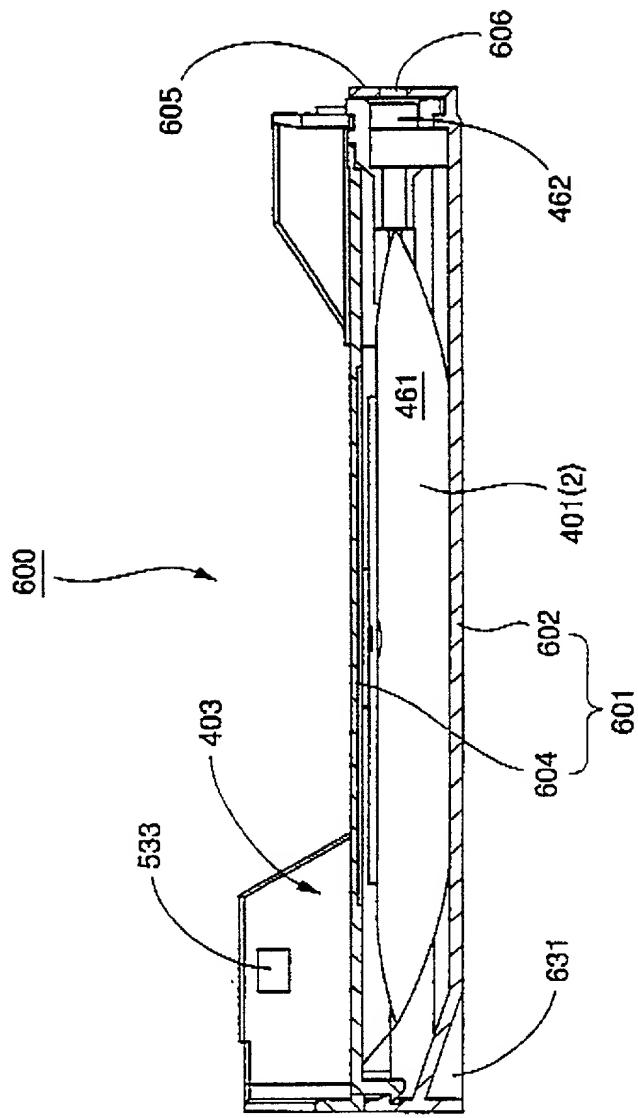


Fig.29

